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PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

## IN THE APPLICATION OF:

REIYAO ZHU

CASE NO.: HT4000USNA

APPLICATION NO.: 10/803384

GROUP ART UNIT: 1771

FILED: MARCH 18, 2004

EXAMINER: ANDREW T. PIZIALI

FOR: MODACRYLIC/COTTON/ARAMID FIBER BLENDS FOR ARC AND FLAME PROTECTION

**RESUBMITTED APPEAL BRIEF UNDER 37 C.F.R. 41.37**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Office Communication dated July 11, 2007, please find enclosed an amended Appeal Brief.

The Amended Appeal Brief addresses the following from the Office Communication concerning paragraphs 4, 6, 8 and 10, namely:

Regarding section (4) above, each limitation (e.g. fiber weight percentage) of each independent claim must be mapped to the specification by page and line number.  
Regarding section (6) above, each separate heading for each ground of rejection on appeal should be bolded, italicized and/or underlined to identify the text as a heading.  
Regarding section (8) above, the brief does not contain a copy of the Declaration.

More specifically, (1) the fiber weight percentage of each independent claim is referenced by page and line number (2) separate headings are bolded for each ground of rejection and (3) a copy of a Declaration under 37 C.F.R. 1.132 of Reiyao Zhu is attached.

Entry of the resubmitted Appeal Brief is requested.

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IN THE APPLICATION OF:

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CASE NO.: HT4000USNA

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EXAMINER: ANDREW T. PIZIALI

FOR: MODACRYLIC/COTTON/ARAMID FIBER BLENDS FOR ARC AND FLAME PROTECTION

AMENDED APPEAL BRIEF UNDER 37 C.F.R. 41.37

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Responsive to the Final Rejection mailed November 7, 2006 as to the above-referenced application, a Notice of Appeal having been filed on January 30, 2007, with a one month extension of time, Appellant submits the following Appeal Brief.

Please charge the Appeal Brief fee of \$500.00 pursuant to 37 CFR 41.20(b)(2), to Deposit Account No. 04-1928 (E. I. du Pont de Nemours and Company). The Commissioner is hereby authorized to charge any additional fees which may be required or credit any overpayment to Deposit Account No. 04-1928.

1. REAL PARTY IN INTEREST

The present application is assigned to E. I. du Pont de Nemours and Company, 1007 Market Street, Wilmington, Delaware 19898, said assignment being recorded at reel 014796, frame 0310.

2. RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related appeals or interferences.

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3. STATUS OF CLAIMS

Claims 1, 3-11, 13-19 stand finally rejected.

Claims 2, 12 and 20 have been cancelled.

The final rejection of claims 1, 3-11, 13-19 is appealed herein

A copy of the claims is set forth in the Appendix hereto.

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4. STATUS OF AMENDMENTS

All amendments have been entered.

5. SUMMARY OF THE INVENTION

As described in original claim 2 on page 11, lines 11 to 14 and recited in claim 1, the present invention is directed to a yarn suitable to provide arc and flame protection containing 45 to 60 weight percent modacrylic fiber, 15 to 35 weight percent cotton fiber and 5 to 30 weight percent aramid fiber. As described in original claim 12 on page 12, lines 18 to 21 and recited in claim 11, the present invention is directed to a fabric suitable to provide arc and flame protection containing 45 to 60 weight percent modacrylic fiber, 15 to 35 weight percent cotton fiber and 5 to 30 weight percent aramid fiber. As described in original claim 20, on page 13, lines 14 to 17 and recited in claim 19, the present invention is directed to a garment suitable to provide arc and flame protection containing 45 to 60 weight percent modacrylic fiber, 15 to 35 weight percent cotton fiber and 5 to 30 weight percent aramid fiber.

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 11, 13-14 and 19 stand rejected under 35 U.S.C. §103(a) based on U.S. Patent No. 6,787,228 to Campbell et al. (hereafter Campbell) in view of U.S. Patent No. 4, 025, 491 to Nelson et al. (hereafter Nelson).

Claims 3-5 and 15-17 stand rejected under 35 U.S.C. §103(a) based on U.S. Patent No. 6,787,228 to Campbell in view of U.S. Patent No. 4,025,491 to Nelson applied to claims 1, 11, 13-14 and 19 further in view of U.S. Patent No. 4,865,906 to Smith, Jr. (hereafter Smith).

Claims 6-8 stand rejected under 35 U.S.C. §103(a) based on U.S. Patent No. 6,787,228 to Campbell in view of U.S. Patent No. 4,025,491 to Nelson in view of U.S.

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Patent No. 4,865,906 to Smith applied to claims 3-5 and 15-17 further in view of U.S.

Patent No. 5,824,614 to Gadoury.

Claims 9-10 and 18 stand rejected under 35 U.S.C. §103(a) based on U.S. Patent No. 6,787,228 to Campbell in view of U.S. Patent No. 4,025,491 to Nelson applied to claims 1, 11, 13-14 and 19 further in view of U.S. Patent No. 5, 824,614 to Gadoury.

Claims 1, 3-5, 11, 13-17 and 19 stand rejected under 35 U.S.C. §103(a) based on U.S. Patent No. 4,865,906 to Smith in view of U.S. Patent No. 4,025,491 to Nelson.

Claims 6-10 and 18 stand rejected under 35 U.S.C. §103(a) based on U.S. Patent No. 4,865,906 to Smith in view of Nelson applied to claim 1, 3-5, 11, 13-17 and 19 further in view of U.S. Patent No. 5,824,614 to Gadoury.

## 7. ARGUMENT

### Introduction

The traversals of the Office position which follows are in two sections, namely Part I – Rejections based on modification of U.S. Patent No. 6,787,228 to Campbell and Part – II Rejections based on modification of U.S. Patent No. 4,865,906 to Smith.

### **Part I – Rejections Based on Modification of U.S. Patent No. 6,787,228 to Campbell.**

#### **Part 1A – Rejection Under 35 U.S.C. §103(a) based on U.S. Patent No. 6,787,228 to Campbell in view of U.S. Patent No. 4,025,491 to Nelson.**

An initial rejection under 35 U.S.C. §103(a) is directed to claims 1, 11, 13-14 and 19 based on a combination of U.S. Patent No. 6,787,228 to Campbell in view of U.S. Patent No. 4,025,491 to Nelson.

An initial issue for Campbell concerns the teaching of this publication opposite the uppermost limit of the claims directed to 40 to 60 weight percent modacrylic fiber on a basis of modacrylic fiber, cotton fiber, and aramid fiber.

The final Office rejection sets forth the following wording:

Campbell discloses that the yarn may comprise at least about 70 weight percent modacrylic fibers (about 70% is considered to read on 60%) and at least about 3 weight percent aramid (column 4, lines 9-56).

(Page 2, last 3 lines of Office rejection)

In the event that it is shown that about 70% does not read on 60%, Campbell also discloses that modacrylic fibers are present for flame resistance (column 3, lines 18-23) while the aramid fibers are present for tensile strength (column 3, lines 25-40).

(page 3, second paragraph, first 3 lines of Office rejection)

The applicant asserts that about 70% does not encompass or read on 60% because there is a 10% difference between 70% and 60%. The examiner respectfully disagrees. Although the examiner agrees that 70-60=10, the reference (Campbell) clearly discloses that about 70% modacrylic fiber is preferably present (column 4, lines 9-14). The word "about" gives the percentage flexibility. Considering that the applicant has failed to show, or attempt to show, any unexpected result from the use of a yarn comprising 60% modacrylic fibers compared to a yarn comprising 70% modacrylic fiber, the applied prior art teaches the claimed invention with sufficient specificity.

(page 8, last paragraph of Office rejection)

Also, the final Office has relied upon *In re Geisler* (citation in quotation below) in support of a position obviousness to encompass an upper limit of acrylonitrile of the present claims as follows:

*In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997) (Applicant argued that the prior art taught away from use of protective layer for a reflective article having a thickness within the claimed range of "50 to 100 Angstroms. " Specifically, a patent to Zehender, which was relied upon to reject applicant's claim, included a statement that the thickness of the protective layer "should be not less than about [100 Angstroms]. " The court held that the patent did not teach away from the claimed invention. "Zehender suggests that there are benefits to be derived from keeping the protective layer as thin as possible, consistent with achieving adequate protection. A thinner coating reduces light absorption and minimizes manufacturing time and expense. Thus, while Zehender expresses a preference for a thicker protective layer of 200-300 Angstroms, at the same time it provides the motivation for one of ordinary skill in the art to focus on thickness levels at the bottom of Zehender's 'suitable' range-about 100 Angstroms- and to explore thickness levels below that range. The statement in Zehender that '[i]n general, the thickness of the protective layer should be not less than about [100 Angstroms]' falls far short of the kind of teaching that would discourage one of skill in

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the art from fabricating a protective layer of 100 Angstroms or less. [W]e are therefore 'not convinced that there was a sufficient teaching away in the art to overcome [the] strong case of obviousness' made out by Zehender.").

(pages 10 and 11, bridging paragraph of Office rejection)

A critical issue in Applicant's position is that one of ordinary skill in the art in the meaning of 35 USC 103(a) would not employ 60% modacrylic fibers (i.e. the closest comparison from the upper limit of claim 1) in view of the teachings of "about 70% modacrylic" which represents the lower limit of Campbell.

Opposite the second quotation above from the Office rejection, applicant in the record of this patent application has accepted a burden of proof set forth in the final Office rejection (based on the same language in an earlier final rejection dated June 27, 2006 prior to filing a Request for Continued Examination namely, "In the event it is shown that about 70% does not read on 60%....".

This burden of proof by applicant is that one of ordinary skill in the art would not employ 60% acrylonitrile fibers from the disclosure of "about 70%" of Campbell to achieve a yarn, fabric and apparel meeting the requirements set forth in Campbell.

It is believed the present Office rejection has shifted from wording in an earlier final rejection of June 27, 2006 (of identical claims herein but prior to filing a Request for Continued Examination). The following wording is present in the June 27, 2006 final rejection directed to the *In re Geisler* decision namely "a *prima facie* case of obviousness may be rebutted by showing ...the art.. teaches away from the claimed invention" with wording:

In accordance with MPEP 2144.05 (III), a *prima facie* case of obviousness may also be rebutted by showing that art, in any material respect, teaches away from the claimed invention. *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997)

(page 3, last paragraph of earlier final Office rejection dated June 27, 2006)

Yet the present final rejection dated November 7, 2006, appealed herein has set forth a standard of "unexpected results" with the following wording present in the third quotation above:

Considering that the Applicant has failed to show, or attempt to show, any unexpected result from the use of a yarn comprising 60% modacrylic fibers compared to a yarn comprising 70% modacrylic fiber, the applied prior art teaches the claimed invention with sufficient specificity.

In reply the Office standard of a need to show unexpected results is unsupported and a requirement for such standard is inconsistent with MPEP 2144.05 III and *In re Geisler*.

Turning to the issue at hand, applicant is mindful of use of "preferred" in a context of "preferred embodiment" for at least about 70 percent modacrylic fibers present in Campbell on column 4, lines 9 to 14:

In a preferred embodiment, the yarn is a blend comprising at least about 70 percent modacrylic fibers, combined with at least about 3 percent high performance, high energy absorptive fibers of material having a tenacity of at least about 4 grams/denier, flame resistance, affinity for high-visibility dyestuffs, and good energy absorption.

However, it is respectfully submitted that such "preferred embodiment" wording must be read in the context of the disclosure and teachings of the entire patent application. Attention is respectfully directed to the following wording present in Campbell on column 4, lines 57 to 65:

Fabric formed according to the present invention requires at least about 70 percent modacrylic fibers and at least about 3 percent aramid fibers when blended with one of the aforementioned energy absorptive materials in order to meet the ANSI, ASTM, and NFPA standards described above. **Preferably, fabric with blends containing about 90 percent or more of the modacrylic fibers and at least about 3 percent of the high energy absorptive fibers provides the most acceptable results.** The following Table I is exemplary of satisfactory fabric constructions that have been formed according to the present invention. (emphasis added)

Table 1 on column 5, lines 1 to 13 shows a minimum 90% modacrylic fiber content with construction B having a 95% modacrylic content.

It may be helpful for emphasis to repeat the above highlighted wording in support of applicant's position.

**"Preferably, fabric with blends containing about 90 percent or more of the modacrylic fibers . . . provides the most acceptable results."**

Therefore the teachings of Campbell to one of ordinary skill in the art is to have a high acrylonitrile content of at least 90% in order to achieve "the most acceptable results." It is considered that one of ordinary skill in the art would expect less acceptable results as the acrylonitrile content falls below 90%. Based on less acceptable results, it can be concluded that using less and less acrylonitrile means

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that a value of "about 70% acrylonitrile" is in fact not a lower limit of 70% but some number above.

Conventional wisdom to one of ordinary skill in the art would denote that one should not pursue a route to obtain less and less acceptable results. Yet the Office position is predicated on lowering the acrylonitrile content to an amount below the teachings of Campbell.

With *In re Geisler* cited in the Office communication, applicant also relies on this decision to rebut the Office position.

The issue in Geisler is obviousness in the meaning of 35 U.S.C. 103(a) of a thinner and thinner layer which would serve as a protective layer. The issue in the present fact situation is not only reducing the acrylonitrile fiber content in comparison to Campbell but also (as will be further discussed) adding another fiber, i.e. cotton, which is required to be present in an amount not lower than 15 weight percent (on a basis of modacrylic, cotton and aramid fibers).

As only evidenced by the Abstract of Campbell, a requirement is present both for flame resistance and arc thermal performance exposure. The Abstract on page 1 of this publication states a requirement namely, "The fabric meets the American Society for Testing and Materials standard for flame resistance and the National Fire Protection Association standard for arc thermal performance exposure." Changing the requirements of Campbell by both an acrylonitrile reduction and the addition of a substantial amount of cotton clearly refutes a *prima facie* case of obviousness in accordance with the Geisler decision. It is respectfully submitted that the Office has not rebutted applicant's position in the meaning of 35 U.S.C. §103(a).

The rejection under 35 U.S.C. §103(a) directed to claims 1, 11, 13-14 and 15 relies on modification of Campbell with the disclosure and teachings of U.S. Patent No. 4,025,491 to Nelson. The final rejection states the disclosure of Nelson and obviousness in combining the two publications as follows:

Campbell does not specifically mention the addition of cotton fibers, but Nelson discloses that it is known in the flame resistant fabric art to blend synthetic fibers with between 15 to 65 weight percent cotton to provide the fabric with the desired aesthetic hand properties, moisture absorption properties, and to minimize static electricity (see entire document including column 1, lines 62-66 and the paragraph bridging columns 4 and 5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to add between 15 to 65 weight percent cotton fibers to the yarn, because the cotton fibers provide the yarn with the desired

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aesthetic hand properties, moisture absorption properties, and to minimize static electricity.  
(page 3, first paragraph of Office rejection)

Since the Office rejection cited column 1, lines 62-66 and the paragraph bridging columns 4 and 5, the wording of Nelson is reproduced. However, lines 62-66 are continued to the next two sentences extending to column 2, line 8 for the paragraph to be read in a proper context:

Generally polyethylene terephthalate fibers are blended with hydrophilic fibers, such as cotton, rayon, wool, etc. to provide the textile with aesthetically desirable hand, moisture absorption to minimize static electricity, etc. Unfortunately, blends of polyester and hydrophilic fibers have poorer fire-retardant properties than the individual fibers. For example, it is well known that textiles prepared from polyester fiber that passes the children's sleepwear test and hydrophilic fiber that passes the children's sleepwear test often fail this test unless each of the component fibers contains substantially more fire-retardant than actually necessary to individually pass this test. This is apparently due to a latticing effect. Accordingly, there is a need for polyesters having a very high concentration of fire-retardants.

The preferred polyesters of this invention, wherein at least 55 mole percent of the dicarboxylic acid components are 2,5-dibromoterephthalic acid moieties, are particularly well suited for forming fire-retardant hydrophilic/polyester yarn blends. The polyester component of the blend comprise from 35 to 85% by weight with correspondingly 65 to 15% by weight hydrophilic yarn depending upon the aesthetic properties desired.

...suitable hydrophilic fibers include cotton, wool, linen, silk, rayon, regenerated cellulose, etc.

The above paragraphs for the column and line numbers cited in the Office rejection demonstrate specificity of the disclosure of Nelson. Illustratively for the first paragraph cited above, the last sentence has the following wording:

**Accordingly, there is a need for polyesters having a very high concentration of fire retardants. (emphasis added)**

Therefore, the Office position is respectfully submitted to be premised on ignoring a direct disclosure of Nelson namely, its purpose of adding a high concentration of fire retardants to a polyester. The preceding quotation of Nelson is

consistent with its column 2, lines 42 to 44 for a combination of fire-retardant polyesters in combination with hydrophilic fibers as follows:

Another object of this invention is to provide a fire-retardant polyester having good mechanical fiber properties suitable for use in hydrophilic fiber blends.

In traversal of the Office rejection, it is noted that in the paragraph bridging column 4 and 5 (directly cited in the Office position) a generalized statement is present of suitable hydrophilic fibers, namely:

... suitable hydrophilic fibers include cotton, wool, linen, silk, rayon, regenerated cellulose, etc.

Thus, it is submitted one of ordinary skill in the art would not turn to Nelson directed to adding fire retardants to polyester for the purpose of adding cotton in a specific amount in the disclosure and teaching of Campbell.

In summary, two specific traversals are present opposite the rejection of claims 1, 11, 13-14 and 19 under 35 U.S.C. §103(a) based on Campbell in view of Nelson namely,

- (1) one of ordinary skill in the art would not lower the modacrylic fiber content of Campbell to approach and reach applicant's upper limit of 60 weight percent (based on modacrylic, cotton and aramid) and
- (2) one of ordinary skill in the art would not introduce cotton in any amount including the claimed 15 to 35 weight percent (based on modacrylic, cotton and aramid) from Nelson to modify the disclosure and teachings of Campbell.

**Part 1 B – Rejection Under 35 U.S.C. §103(a) based on U.S. Patent No. 6,787,882 to Campbell in view of U.S. Patent No. 4,025,491 to Nelson further in view of U.S. Patent No. 4,865,906 to Smith, Jr.**

Claims 3-5 and 15-17 stand rejected under 35 U.S.C. §103(a) based on Campbell in view of Nelson applied to claims 1, 11, 13-14 and 19 further in view of U.S. Patent No. 4,865,906 to Smith.

The Office position states that "...Campbell does not specifically mention the use of both meta-aramid and para-aramid fibers". Smith is applied to correct this deficiency. In reply applicant in the record of this patent application has pointed out that Campbell on column 5, lines 12 and 13 discloses in Construction D use of Nomex® which is a meta-aramid and Kevlar® which is a para-aramid.

Patentability of claims 3-5 and 15-17 is respectfully present for the same reasons advanced for claim 1, 11, 13-14 and 19.

**Part 1 C – Rejection Under 35 U.S.C. §103(a) based on  
U.S. Patent No. 6,787,882 to Campbell in view of U.S. Patent  
No. 4,025,491 to Nelson in view of U.S. Patent No. 4,865,906 to  
Smith, Jr., further in view of U.S. Patent No. 5,824,614 to  
Gadoury**

Claims 6-8 stand rejected under 35 U.S.C. §103(a) based on Campbell in view of Nelson and Smith and further in view of U.S. Patent No. 5,824,614 to Gadoury.

This latter publication is applied to teach an added use of an anti-static component. Applicant concede the use of an anti-static component is known; accordingly, claim 6-8 represent a patentable advance in the art for the same reasons for claim 1, 11, 13-14 and 19.

**Part 1 D – Rejection Under 35 U.S.C. §103(a) based on  
U.S. Patent No. 6,787,882 to Campbell in view of U.S. Patent  
No. 4,025,491 to Nelson, further in view of U.S. Patent No.  
5,824,614 to Gadoury**

Claims 9-10 and 18 stand rejected under 35 U.S.C. §103(a) based on Campbell, Nelson and Gadoury. These claims represent a patentable advance in the art for the same reasons for claims 1, 11, 13-14 and 19.

**Part II – Rejections Based on Modification of U.S. Patent No.  
4,865,906 to Smith**

**Part II A – Rejection Under 35 U.S.C. §103(a) based on  
U.S. Patent U.S. Patent No. 4,865,906 to Smith, Jr., in view of  
No. 4,025,491 to Nelson**

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An initial rejection under 35 U.S.C. 103(a) is directed to claims 1, 3-5, 11, 13-17 and 19 based on a combination of U.S. Patent No. 4,865,906 to Smith in view of U.S. Patent No. 4,025,491 to Nelson. The disclosures of Nelson has been set forth in detail earlier in this Appeal Brief.

The final Office action sets forth on the paragraph bridging pages 12 and 13:

The applicant asserts that oxidized polyacrylonitrile is not a modacrylic for the reasons set forth in the declaration filed on 10/19/2006. The examiner respectfully disagrees. Firstly, it is noted that page 3 of the declaration ends with an incomplete sentence, therefore, the declaration is not completely comprehensible. Secondly, the declaration incorrectly assumes that a conventional dictionary definition defines "modacrylic fiber" as used in the current claims. The specification clearly states, "By modacrylic fibers is meant acrylic synthetic fiber made from a polymer comprising primarily acrylonitrile." (see page 3, lines 14 and 15 of the current specification) MPEP 2111.01 III states:

**"Where an explicit definition is provided by the Applicant for a term, that definition will control interpretation of the term as it is used in the claim. *Toro Co. v. White Consolidated Industries Inc.*, 199 F.3d 1295, 1301, 53 USPQ2d 1065, 1069 (Fed. Cir. 1999)."**

The Examiner cites USPN 4, 970,111 to Smith, Jr. (see column 3, lines 49-68) as evidence that, according the definition set forth in the current specification, oxidized polyacrylonitrile is a modacrylic.

It is respectfully submitted that the Office position is *prima facie* incorrect. As set forth on page 3, lines 14 and 15 of the present patent application (and quoted in the above wording in the Office rejection), a definition requires: "By modacrylic fibers is meant acrylic synthetic fiber...". (emphasis added). Oxidized polyacrylonitrile is not an "acrylic" since oxidation of the polyacrylonitrile results on conversion to carbon.

The Declaration of Dr. Zhu into detail sets forth the process of making carbon fibers from polyacrylonitrile with a section of "Raw Materials" (which includes carbon fibers made from polyacrylonitrile) and "Manufacturing" including "Process," "Spinning," "Stabilizing," "Carbonizing," "Treating the Surface," and "Sizing." An incomplete sentence is admittedly present on the Declaration on page 3 and should have read,

"This process is called carbonization and leaves a fiber composed of long, tightly inter-locked chains of carbon atoms with only a few non-carbon atoms present."

However, for purposes of prosecution including this Appeal, the incomplete sentence can be ignored.

Since Dr. Zhu's education and work experience is directed to textile chemistry, she is qualified to set forth the conclusion in the Declaration, namely:

That I state in summary Smith, Jr. USP 4,865,906 has no relevance to my patent application since oxidized polyacrylonitrile fiber is chemically different from modacrylic fiber.

Accordingly, "oxidized polyacrylonitrile fiber is not "acrylic synthetic fiber." A definition is set forth in the present specification and quoted in the Office Action. It is respectfully submitted an incorrect Office interpretation is present since "oxidized polyacrylonitrile fiber" represents "carbon fiber."

Since Smith has no applicability, any modification with Nelson likewise is inapplicable. The Office position is ... "Smith does not specifically mention the addition of cotton fibers" (page 7, third complete paragraph of final rejection). It is respectfully submitted that one of ordinary skill in the art would not add cotton from Nelson into a carbon containing fiber, i.e. oxidized polyacrylonitrile, of Smith.

**Part II B – Rejection Under 35 U.S.C. §103(a) based on U.S. Patent No. 4,865,906 to Smith in view of Nelson applied to claim 1, 3-5, 11, 13-17 and 19 further in view of U.S. Patent No. 5,824,614 to Gadoury.**

Claims 6-10 and 18 stand rejected based on Smith in view of Nelson and further in view of Gadoury. The inapplicability of this rejection is likewise inapplicable due to the combination of Smith and Nelson.

**SUMMARY**

Appellant respectfully submits the Office rejections based on modification of U.S. Patent No. 6,787,228 to Campbell and U.S. Patent No. 4,865,906 to Smith are incorrect. Appellant has met a burden of proof why "about 70%" in Campbell does not equate to "60%". Furthermore, a Declaration under 37 C.F.R. §1.132 by

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Reiyao Zhu provides reasons why "oxidized acrylonitrile" is not "an acrylic" but rather carbon which is directly contrary to the Office position.

Accordingly, Appellant respectfully requests a reversal of the Office position and withdrawal of the rejections of claims 1, 3-11 and 13 to 19 under 35 U.S.C. §103(a).

The Board of Appeals is respectfully requested to remand this patent application to the Examiner to allow all claims under prosecution.

In view of the foregoing, allowance of the above-referenced application is respectfully requested.

Respectfully submitted,



ANDREW G. GOLIAN  
ATTORNEY FOR APPLICANT  
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Facsimile: (302) 892-7343

Dated: August 7, 2007

8. CLAIMS APPENDIX

1. (Previously Presented) A yarn suitable to provide arc and flame protection comprising:

- (a) 45 to 60 weight percent modacrylic fiber,
- (b) 15 to 35 weight percent cotton fiber and
- (c) 5 to 30 weight percent aramid fiber,

said percentages on the basis of components (a), (b) and (c).

2. (Cancelled)

3. (Original) The yarn of claim 1 where the fiber includes both para-and meta-aramid fiber.

4. (Original) The yarn of claim 3 wherein the para-aramid fiber is present in a range from 20 to 40 weight percent and the meta-aramid fiber is present in a range from 60 to 80 weight percent on a basis of total aramid fiber.

5. (Original) The yarn of claim 4 wherein the para-aramid fiber is present in a range from 25 to 35 weight percent and the meta-aramid fiber is present in a range from 65 to 75 weight percent.

6. (Original) The yarn of claim 5 which additionally contains an anti-static component.

7. (Original) The yarn of claim 6 wherein the anti-static component is carbon or metal.

8. (Original) The yarn of claim 7 wherein the anti-static component is carbon.

9. (Original) The yarn of claim 1 which additionally contains an anti-static component.

10. (Original) The yarn of claim 9 wherein the anti-static component is carbon.

11. (Previously Presented) A fabric suitable to provide an arc and thermal protection comprising:

- (a) 45 to 60 weight percent modacrylic fiber,
- (b) 15 to 35 weight percent cotton fiber and
- (c) 5 to 30 weight percent aramid fiber,

said percentages on the basis of components (a), (b) and (c).

12. (Cancelled)

13. (Original) The fabric of claim 11 wherein the char length according to ASTM D-6413-99 is less than 6 inches.

14. (Original) The fabric of claim 11 wherein the char length according to ASTM D-6413-99 is less than 4.5 inches.

15. (Original) The fabric of claim 11 wherein the fabric includes fibers of para- and meta-aramid.

16. (Original) The fabric of claim 15 wherein para-aramid fiber is present in a range from 20 to 40 weight percent and meta-aramid fiber is present in a range from 60 to 80 weight percent on a basis of total aramid fiber.

17. (Original) The fabric of claim 16 wherein the para-aramid fiber is present in a range from 25 to 35 weight percent and the meta-aramid fiber is present in a range from 65 to 75 weight percent.

18. (Original) The fabric of claim 11 which additionally contains an anti-static component.

19. (Previously Presented) A garment suitable to provide arc and thermal protection:

- (a) 45 to 60 weight percent modacrylic fiber,
- (b) 15 to 35 weight percent cotton fiber and
- (c) 5 to 30 weight percent aramid fiber,

said percentages on the basis of components (a) (b) and (c).

20. (Canceled)

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9. EVIDENCE APPENDIX

Declaration under 37 C.F.R. §1.132 by Reiyao Zhu signed September 22, 2006. (attached as pages 1 to 6 in Appendix)

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10. RELATED PROCEEDINGS APPENDIX

None.